

Appl. No. 09/581,485
Amdt. dated May 12, 2004
Reply to Office action of Dec. 31, 2003

Amendments to the Specification:

Please replace second and final paragraph on page 6 bridging page 7 of the specification with the following amended paragraphs:

A very wide range of potential stabilizers were examined in terms of their chemical reactivity, structure and the conditions under which the tests were performed. All tests have been performed in an identical manner by the addition of a piece of montmorillonite film to an aqueous solution of the intercalator (5cm³ of a 5% w/w solution), the pH of which had already been adjusted (where necessary, with 10% v/v aqueous HCl solution). The potential cross-linking reagent was then immediately added. The intercalating reagents investigated were BNH₄, B2P, B4P, DAP, DEA, EA, EDA, EG, HQ, P, PA, PC, PEDG, PPD, PPDG and STAPLEX650 and the potential cross-linkers A, AA, BA, DEC, DEM, DEO, DIT, DMM, EPP, FS, GA, MA, OA, PPDGE, PO and styrene. Cross-linkers were added as either neat reagents (0.5cm³ A, DEM, DEO, DIT, DMM, EPP, MA, PPDGE, PO, styrene and 0.5g BA) or as aqueous solutions (5cm³ 5% w/w solution AA, DEC, OA; 1cm³ of 50% w/w solution GA and 5cm³ of a 37% w/v solution FS). Films were then allowed to stand in the reaction mixture for 1 day before washing with distilled water and were then placed in fresh distilled water to monitor their long term stability. (The abbreviations used in this paragraph and the following are listed in ~~Appendix 1~~ Table 0.)

The montmorillonite film tests provided a means of ascertaining the potential of a number of reagent combinations; the results are summarized in Table 1 ~~(Appendix 2)~~. (In ~~the table of Appendix 2~~ Table 1, the term "Stable" applied to describe the film stability means that such films do not dissolve in water, while "Exfoliates" simply means they are visibly fatter after treatment. The

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latter term does not mean the films fall apart; this only happens if extreme exfoliation occurs and the resulting material does not have a matrix around it which "sets".) These combinations can be broadly divided into four categories, i.e., (a) Substrate intercalation; (b) Condensation stabilization with no pH adjustment; (c) Stabilization through epoxide ring opening under neutral or acidic conditions; (d) Substrate in-situ polymerization.

Please add new pages 13-14 and 15-17 to the specification. The pages which were previously Appendix 1 and 2. They are attached as appendices to this response.

Please add the Abstract (attached as appendix to this response)